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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/815,372

03/31/2004

Wow Wu

8228

25859

7590

07/26/2006

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EXAMINER

PAPE, ZACHARY

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/815,372

Applicant(s)

WU, WOW

Examiner

Zachary M. Pape

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-6 and 8-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,3-6 and 8-18 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

The following detailed action is in response to the correspondence filed 5/22/2006.

#### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. **Therefore, the “width (of the mounting device) shorter than the short side of the heat sink” as claimed in 11 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 11-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 11, 17, and 18 recite, "a width shorter than the short side of the heat sink / base" which has no support in either the specification or the drawings. With respect to the specification, the specification fails to disclose any of the above claimed subject matter. With respect to the drawings, the Examiner respectfully asserts that the present figures (taken alone or in combination) fails to disclose "a width shorter than the short side of the heat sink / base". As detailed in Fig 1, the width of the mounting device (20, defined by beams 27) is not shorter than the short side of the heat sink or base since the edge of the beams and the fasteners grip the outside of the heat sink / base.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. (US 6,707,674) in view of Wu (US 6,542,369) and further in view of Lin et al. (US 6,396,696).

With respect to claims 1, 6, Bryant et al. teaches a mounting device assembly comprising: a circuit board (26) having an electronic component (12) mounted thereon, a heat sink (32) comprising a base (As illustrated in Fig 4), and a plurality of fins provided on the base (As illustrated in Fig 4); and a mounting device (30) for mounting the heat sink to the circuit board, the mounting device comprising: a body (Comprising 38a,b, 40a,b, 42, and 44) defining an opening (Between 40a, and 40b) for extension of the electronic component therethrough to contact the base (As illustrated in Fig 4), and comprising a plurality of beams (38a, 38b, 40a, 40b, 42, and 44) surrounding the electronic component and being sandwiched between the base and the circuit board (As illustrated in Fig 4); engaging means (64, 50) integrally formed from the body for engaging with the heat sink at outsides of the fins, the base of the heat sink defines a plurality of cutouts (Notch in 64) in opposite longitudinal sides thereof, the beams comprise a pair of longitudinal beams (44), and the engaging means comprises a plurality of fasteners (64, 50) formed on the longitudinal beams. Bryant et al. is silent as

to latching means integrally formed from the body for latching the mounting device to the circuit board, and that the fasteners formed on the longitudinal beams engage in the cutouts. Wu teaches the conventionality of a mounting device with a body (21) comprising a latching means (Comprising 29, 30) integrally formed from the body (As illustrated in Fig 3) to attach the mounting device to a circuit board (4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the latching means of Wu with the mounting device of Bryant et al. to provide a fixing device that meets the requirements of fast assembling and disassembling (Wu, Column 1, Lines 34-36). With respect to engaging with the cutouts, Lin et al. teaches the conventionality of utilizing an engaging means (62) for engaging with a cutout (26) on the base of a heatsink. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lin et al. with those of Bryant et al. in view of Wu to firmly secure the heat sink to the electronic device (Lin, Column 1, Lines 57-58).

With respect to claims 3 and 8, Wu further teaches a pair of locking slots (41) on opposite sides of the electronic component and the latching means comprises a pair of latches (29, 30) formed on bottoms of longitudinal beams and engaging in the locking slots (As illustrated in Fig 6).

With respect to claims 4 and 9, Wu further teaches that the circuit board (4) defines a plurality of pairs of locating openings (4) surrounding the electronic component (12), and the body of the mounting device comprises a pair of feet (29, 30) received in the locating openings respectively (As illustrated in Fig 6). With respect to

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the limitation that the mounting device comprises a plurality of pairs of feet, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add additional feet and openings, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.* 193 USPQ. Adding additional feet and openings would allow the frame to be better secured to the circuit board.

**Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. in view of Wu and further in view of Lin et al. and further in view of Kosteva et al. (US 5,870,285).**

With respect to claims 5 and 10, Bryant et al. in view of Wu and further in view of Lin et al. teaches the limitations of claims 3 and 8 above, but fails to teach that the base of the heat sink defines a pair of holes in opposite lateral side portions thereof, the beams further comprise a pair of lateral beams, a pair of posts is formed on the lateral beams, and the posts are fittingly received in the holes. Kosteva et al. teaches the conventionality of a heat sink (16) which defines a pair of holes (17) in opposite lateral side portions thereof and a pair of posts (11,12) formed on lateral beams, and the posts are fittingly received in the holes portions (Column 2, Lines 52-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kosteva et al. with the teachings of Bryant et al, Wu and Lin et al. to hold the heat sink relative to an electronic device (Kosteva, Column 1, Lines 56-57).

**Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. in view of Wu and further in view Lofland et al. (US 6,906,923).**

With respect to claim 11, as best can be understood by the Examiner, Bryant et al. further teaches, a mounting device assembly comprising: a circuit board (26) having an electronic component (12) mounted on a surface thereof; a heat sink (32) having a long side and a short side adjoining the long side (As illustrated in Fig 2); a mounting device (30) being arranged between the circuit board and the heat sink and around the electronic component, whereby a boundary (The defined by the inside edge of 40a, 40b, 38a, and 38b) of the mounting device is located within and under the heat sink (See Fig 2); fasteners (46) being formed on one of the mounting devices (30) and the heat sink and snappingly engaged with the other of the mounting device and the heat sink (32, see Figs 6-8), thus fastening the mounting device to the heat sink. Bryant et al. fails to teach latches being formed on one of the mounting device and the circuit board and snappingly engaged with the other of the mounting device and the circuit board; thus latching the mounting device to the circuit board, and the mounting device having a length shorter than the long side of the heat sink and a width shorter than the short side of the heat sink. Wu teaches the conventionality of a mounting device with a body (21) comprising a latching means (Comprising 29, 30) integrally formed from the body (As illustrated in Fig 3) to attach the mounting device to a circuit board (4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the latching means of Wu with the mounting device of Bryant et al. to provide a fixing device that meets the requirements of fast assembling and disassembling (Wu,



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Column 1, Lines 34-36). With respect to the mounting device length, Lofland et al. teaches a mounting device (90) having a length (Defined by 92b, 92d) shorter than the long side of the heat sink, and a width (Defined by 92a, 92c) shorter than the short side of the heat sink (See Fig 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lofland et al. with that of Bryant et al. to provide appropriate thermal dissipation for the needs of the electrical device (Column 3, Lines 52-55).

With respect to claim 12, Bryant et al. further teaches that the mounting device (30) is a substantial rectangular plate (As illustrated in Fig 5).

With respect to claim 13, Wu further teaches two pairs of feet (29, 30) are formed on four corner portions of the mounting device, each pair of the feet are oriented perpendicular to each other and fittingly engaged in the circuit board (As illustrated in Fig 6). With respect to the limitation that there are "four pair of feet", it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an additional two pairs of feet, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Adding additional feet would allow the frame to be better secured to the circuit board.

With respect to claim 14, Bryant et al. further teaches that the fasteners (46) are formed on the mounting device and snap a base plate of the heat sink which is in contact with the electronic component (As illustrated in Figs 6-8; see also Column 3, Lines 50-54).

With respect to claim 15, Wu further teaches that the latches (29, 30) are formed on the mounting device (As illustrated in Fig 3) and snap a surface of the circuit board opposite to the surface where the electronic component mounted (As illustrated in Fig 6).

With respect to claim 16, Bryant et al. further teaches that the mounting device is provided with an upward plane (Defined by 39) supporting a base of the heat sink, and defines an opening (Between 40a, and 40b) to allow one of said heat sink and said electronic component to extend therethrough to contact the other (As illustrated in Fig 8, see also Column 3, Lines 3-9).

**Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bryant et al. in view of Wu and further in view of Lin et al. and further in view of Lofland et al.**

With respect to claims 17 and 18, as best can be understood by the Examiner, Bryant et al. in view of Wu teach the limitations of claims 1 and 6 above and further teaches that the base of the heat sink (32) has a long side and a short side (See Fig 2), whereby a boundary (The defined by the inside edge of 40a, 40b, 38a, and 38b) of the mounting device is located within and under the heat sink, but fails to teach that the mounting device has a length shorter than the long side of the base and a width shorter than the short side of the base. Lofland et al. teaches a mounting device (90) having a length (Defined by 92b, 92d) shorter than the long side of the base (See Present Office Action Fig 1 below) of a heat sink, and a width (Defined by 92a, 92c) shorter than the

short side of the heat sink (See Fig 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Lofland et al. with that of Bryant et al. to provide appropriate thermal dissipation for the needs of the electrical device (Column 3, Lines 52-55).

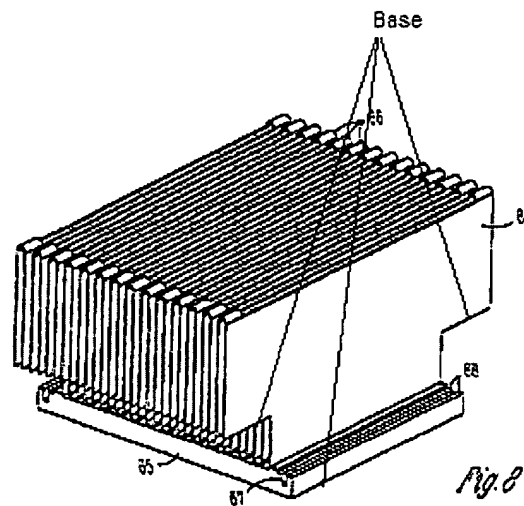


Fig 1

### ***Response to Arguments***

4. Applicant's arguments filed 5/22/06 have been fully considered but they are not persuasive.

With respect to the Applicant's remarks to claims 1 and 6 that, "the teachings of Lin et al. cannot be combined with those of Bryan et al. in view of Wu", the Examiner respectfully notes that it was never the Examiner's position that all the additional functions and limitation (I.E. the clips, etc.) be incorporated into the Bryant et al. reference **only** that the teachings of having an engaging means (62) engage in a cutout

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(26) of the base of a heat sink be incorporated into the teachings of Bryant et al. In other words Bryant et al. should only be modified such that the locking means (Comprising 46, 50, and the cutout) would comprise a fastener (62 as taught by Lin et al.) which engages in the cutout of Bryant et al. as taught by Lin et al.

With respect to the Applicant's remarks to claims 1 and 6 that, "There is no motivation in Bryant et al. to combine the tab 62 of Lin et al. into the ramp surface 50 of the retention tab 46 in order to retain the heat sink 32 and the frame member 30 together" the Examiner respectfully notes that the Examiner is not required to provide motivation from the base reference when making a combination, only that motivation be present in either of the references or be knowledge generally available to one of ordinary skill in the art (See MPEP 706.02(j) which states, "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."). In the present case the Examiner has explicitly cited motivation for combining the teachings of Lin et al. with Bryant et al. (See the rejection above to claims 1 and 6, see also Lin, Column 1, Lines 57-58).

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,952,348 which is filed by the same applicant and carries the same assignee.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

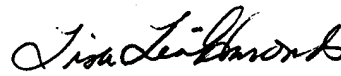
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. & every other Fri. (8:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached at 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZMP

  
**LISA LEA-EDMONDS**  
**PRIMARY EXAMINER**